

APPENDIX B

Prohibited Species Catch in the BSAI for 2002

updated by Jane DiCosimo

Information is presented on the bycatch of prohibited species in the groundfish fisheries conducted in the Bering Sea/Aleutian Islands management area (BSAI). It is intended to assist the Council in its recommendation of prohibited species catch (PSC) limits and seasonal apportionments of crab and halibut, and provide bycatch information on other prohibited species. Regulations have been implemented to reduce bycatch of red king crab, Tanner crab, snow crab, halibut, herring, and salmon taken in groundfish fisheries. The following is a summary of these management measures.

Red King Crab: A stairstep based PSC limit for red king crab in Zone 1 was established as part of Amendment 37. PSC limits are based on abundance of Bristol Bay red king crab as follows:

- (A) When the number of mature female red king is equal to or below the threshold number of 8.4 million crab, or the effective spawning biomass (ESB) is less than 14.5 million pounds, the Zone 1 red king crab PSC limit would be 35,000 crabs;
- (B) when the number of mature female red king crab is above threshold, and the ESB is equal to or greater than 14.5 but less than 55 million pounds, the Zone 1 red king crab PSC limit would be 100,000 crabs; and
- (C) when the number of mature female red king crab is above threshold, and the ESB is equal to or greater than 55 million pounds, the Zone 1 red king crab PSC limit would be 200,000 crabs.

Note that Amendment 57 contained a provision to reduce red king crab bycatch by an additional 3,000 crabs as part of the regulation prohibiting the use of bottom trawl gear for pollock fisheries. **Based on the 2002 estimate of ESB (37.7 million pounds), and the 3,000 crab reduction for Amendment 57, the PSC limit for 2003 will be 97,000 red king crabs.** The red king crab cap has generally been allocated among the pollock/mackerel/other species, Pacific cod, rock sole, and yellowfin sole fisheries. Once a fishery exceeds its red king crab PSC limit, Zone 1 is closed to that fishery for the remainder of the year, unless further allocated by season.

Tanner Crab: Separate Tanner (*C. bairdi*) crab PSC limits are set for Zone 1 and Zone 2. These limits may be further allocated among the pollock/mackerel/other species, Pacific cod, rock sole, turbot/sablefish/arrowtooth, rockfish, and yellowfin sole fisheries. When a fishery exceeds its PSC limit in one zone, trawling is closed for that zone for the remainder of the year.

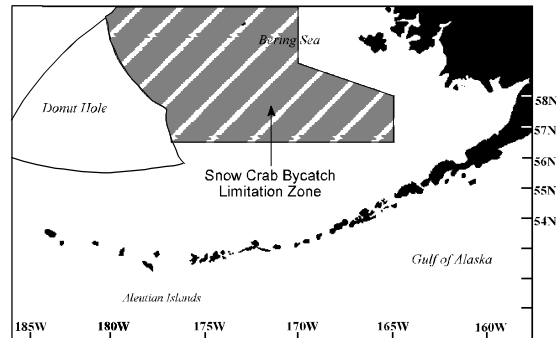
Under Amendment 41, PSC limits for *bairdi* in Zones 1 and 2 are based on total abundance of *bairdi* crab as indicated by the NMFS trawl survey. These limits are further reduced by 50,000 as prescribed by proposed Amendment 57. **Based on 2002 abundance (464.9 million crabs), and the Amendment 57 adjustment, the PSC limit for *C.***

Amendment 41 PSC limits adopted for bairdi Tanner crab.

<u>Zone</u>	<u>Abundance</u>	<u>PSC Limit</u>
Zone 1	0-150 million crabs	0.5% of abundance
	150-270 million crabs	750,000
	270-400 million crabs	850,000
	over 400 million crabs	1,000,000
Zone 2	0-175 million crabs	1.2% of abundance
	175-290 million crabs	2,100,000
	290-400 million crabs	2,550,000
	over 400 million crabs	3,000,000

bairdi in 2003 will be 980,000 (1,000,000 minus 20,000) crabs in Zone 1 and 2,970,000 (3,000,000 minus 30,000) crabs in Zone 2.

Snow Crab: Under Amendment 40, PSC limits for snow crab (*C. opilio*) are based on total abundance of *opilio* crab as indicated by the NMFS standard trawl survey. The snow crab PSC cap is set at 0.1133% of the Bering Sea snow crab abundance index, with a minimum PSC of 4.5 million snow crab and a maximum of 13 million snow crab. This number is further reduced by 150,000 crabs as part of Amendment 57. **Based on the 2002 survey estimate of 1.49 billion crabs, the 2003 *opilio* crab PSC limit will be 4,350,000 crabs (4,500,000 minus 150,000).**



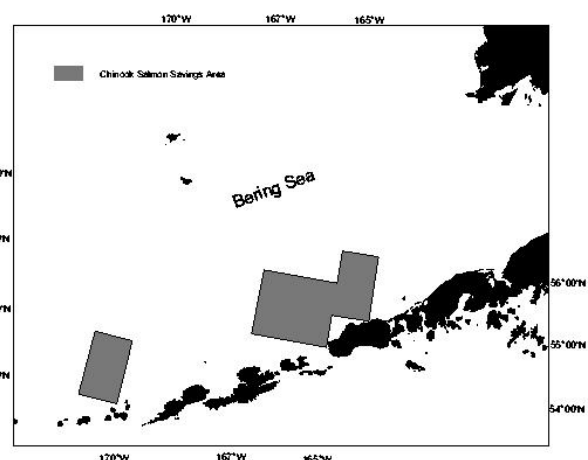
Snow crab taken within the “Snow Crab Bycatch Limitation Zone” accrue towards the PSC limits established for individual trawl fisheries. Upon attainment of a snow crab PSC limit apportioned to a particular trawl target fishery, that fishery is prohibited from fishing within the snow crab zone.

Location of the snow crab bycatch limitation zone.

Halibut: Halibut PSC is measured in metric tons of halibut mortality and allocated among trawl and hook & line gear. PSC amounts have been 3,775 mt for trawl and 900 mt for hook & line gear. As part of Amendment 57, the trawl PSC amount is reduced by 100 mt to reflect the prohibition on the use of bottom trawl gear in the pollock fishery. The annual trawl halibut PSC is allocated among the Pacific cod, yellowfin sole, rock sole, pollock/mackerel/other species, rockfish, and sablefish/turbot/arrowtooth fisheries. Both the trawl and hook and line PSC limits are seasonally allocated among fisheries. When a fishery exceeds its seasonal limit, the entire Bering Sea is closed for that fishery for the remainder of the season.

Herring: The herring PSC limit is set at 1% of stock biomass. Once the PSC limit has been obtained, one or all of the three designated Herring Savings Areas closes, depending on the time of the year.

Chinook Salmon: The chinook PSC limits were first established by Amendment 21b which closed specified areas to trawling if and when 48,000 chinook salmon were bycaught. In 1999, the Council adopted Amendment 58 to reduce the amount of chinook salmon allowed to be taken as bycatch in BSAI trawl fisheries. Specifically, the alternative adopted did the following: (1) reduced the chinook salmon bycatch limit from 48,000 to 29,000 chinook salmon over a 4-year period, (2) implemented year-round accounting of chinook salmon bycatch in the pollock fishery, beginning on January 1 of each year, (3) revised the boundaries of the Chinook Salmon Savings Areas, and (4) set more restrictive closure dates. The bycatch limit for 2002 fisheries was set at 33,000 chinook salmon. These areas will be then re-opened to trawling on April 16th for the remainder of the year. **The bycatch limit for 2003 fisheries will be set at 29,000 chinook salmon.**

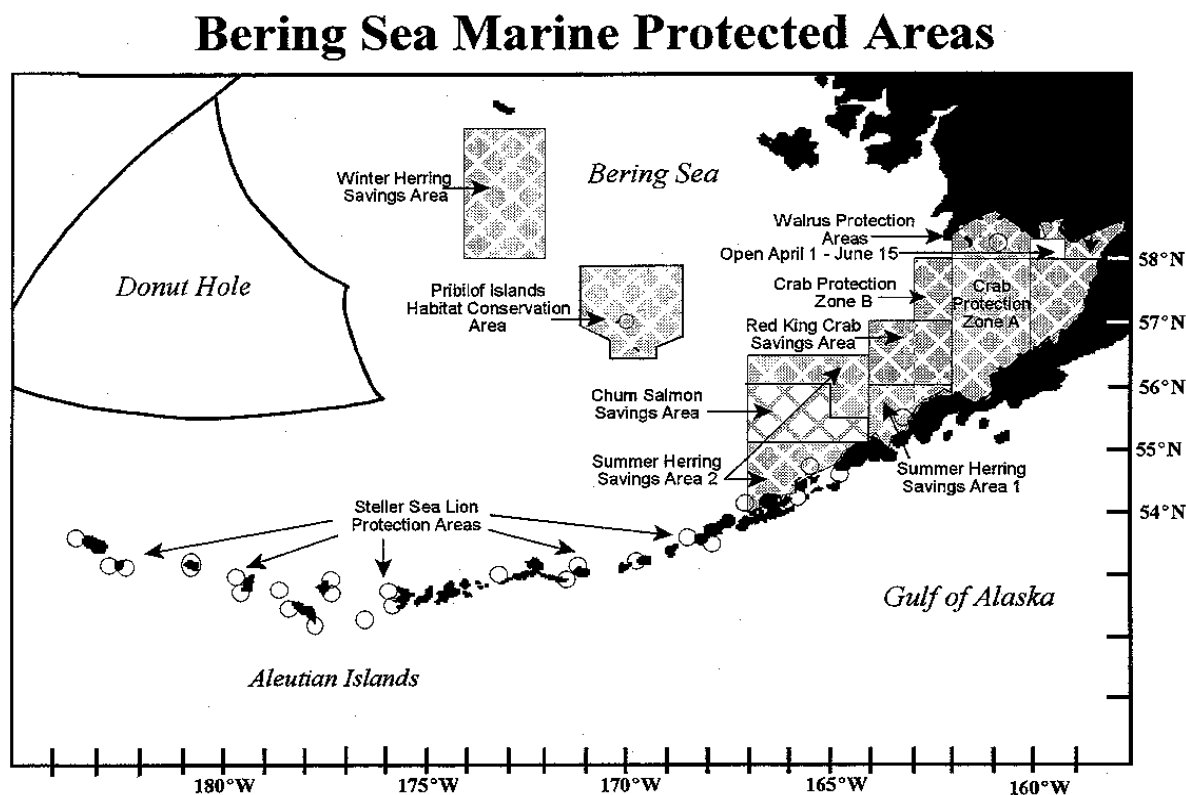


Location of the chinook salmon savings areas in the BSAI, as modified by Amendment 58.

Chum Salmon: A chum salmon PSC reduction plan was established by Amendment 35. Under this plan, the Chum Salmon Savings Area is closed from August 1 to September 1, but this area opens September 2, unless the 42,000 cap is reached (accounting to begin August 15 in the CVOA). If the cap is reached the fishery will open October 15th.

Please refer to Figure 1 for the location of Bering Sea Species Protection Areas discussed above. PSC apportionments of red king crab, Tanner crab, and halibut for the 2002 trawl fisheries are shown in Table 1. The 2002 bycatch harvest to date are listed in Tables 2-4.

Figure 1



Nearshore Bristol Bay Closure Area: prohibits all trawling at all times in the EEZ within the area east of 162° W longitude with the exception of an area bounded by 159° to 160° W and 58° to 58°43' N that would remain open April 1 - June 15.

Chum Salmon Savings Area: closed to all trawling August 1-31 with provisional extension to October 15.

Chinook Salmon Savings Area (not shown): closed to all trawling when 48,000 chinooks are taken.

Bristol Bay Red King Crab Area: closed seasonally to non-pelagic trawling.

Pribilof Islands Habitat Conservation Area: closed year-round to all trawling.

Crab Protection Zones: Zone A closed to trawling year-round.
Zone B closed to trawling March 15 - June 15.

Crab Bycatch Limitation Zones (not shown): closed to specified trawl fisheries when limits are reached.

C. Opilio Bycatch Limitation Zones (not shown): closed to specified trawl fisheries when limits are reached.

Walrus Protection Areas: closed to all fishing April 1 - September 30.

Steller Sea Lion Protection Areas: closed to all trawling year-round with some extended seasonally on January 20.

Herring Savings Areas: closed to all trawling when trigger reached.
Summer Area 1 closed June 15 - July 1.
Summer Area 2 closed July 1 - August 15.
Winter Area closed September 1 - March 1.

**Table 1. 2002 BSAI Trawl Fisheries PSC
Council Recommended Apportionments and Seasonal Allowances**

Fishery Group	Halibut Mortality Cap (mt)	Herring (mt)	Red King Crab (animals) Zone1	C. bairdi Zone1	C. bairdi Zone2	C. opilio COBLZ
Yellowfin sole	886	139	16,664	340,844	1,788,459	2,776,981
January 20 - March 31	262					
April 1 - May 20*	195					
May 21 - July 3	49					
July 4 - Dec 31	380					
Rocksole/other flatfish	779	20	59,782	365,320	596,154	969,130
January 20 - March 31	448					
April 1 - July 3	164					
July 4 - Dec 31	167					
Sablefish/arrowtooth		9				40,238
Rockfish	69	7			10,988	40,237
Pacific cod	1,434	20	11,664	183,112	324,176	124,736
Pollock/mackerel/o.species	232	1,330	1,615	17,224	27,473	72,428
CDQ Fisheries	275		7,275	73,500	222,750	326,250
TOTAL	3,675	1,526	97,000	980,000	2,970,000	4,350,000

- 1) Unused PSC allowances may be rolled into the following seasonal apportionment.
- 2) 35% of the red king crab PSC for the rock sole fishery is apportioned to the 56 - 56+10' RKCSA strip.

**2002 BSAI Non-Trawl Fisheries PSC Bycatch Allowances
and fixed gear Pacific cod seasonal apportionments**

Fishery Group	Halibut Mortality (mt)
Pacific Cod	775
Jan 1 - June 10	320
Aug 15 - Dec. 31	455
Other Non-Trawl*	58
May 1 - December 31	58
CDQ Fisheries	67
TOTAL	900

- * Includes hook & line fisheries for rockfish and Greenland turbot.
Sablefish hook & line fisheries will be exempted from the halibut mortality cap.
Jig and pot gear will also be exempted from the halibut mortality cap.
Unused PSC from the first season will be rolled over to the second season.

Table 2

NMFS/AKR
10/31/02
12:33:18

2002 BERING SEA/ALEUTIAN ISLANDS FISHERIES
PROHIBITED SPECIES BYCATCH
Week Ending: 10/26/02

TRAWL HERRING, BSAI

Fishery group	Herring (mt)	Cap (mt)	%
Midwater pollock	105	1,184	9%
Pacific cod	3	20	13%
Yellowfin sole	19	139	14%
Rockfish	0	7	2%
Other	10	146	7%
Rock sole/Other flatfish	4	20	21%
GTRB/ARTH/SABL	0	9	1%
Total:	141	1,525	9%

TRAWL SALMON, BSAI

Fishery group	Chinook (# 's)	Other (# 's)	Total (# 's)
Midwater pollock	31,862	76,753	108,615
Bottom pollock	0	0	0
Pacific cod	3,167	970	4,136
Yellowfin sole	324	457	782
Rock sole/Other flatfish	675	149	824
Rockfish	0	0	0
Other	957	376	1,334
Seasonal Total:	36,986	78,705	115,690

TRAWL BAIRDI TANNER CRAB

Fishery group	ZONE 1			ZONE 2		
	Crabs (# 's)	Cap (# 's)	%	Crabs (# 's)	Cap (# 's)	%
Rock sole/Other flatfish	286,732	365,320	78%	260,425	596,154	44%
Pacific cod	138,690	183,112	76%	84,930	324,176	26%
Yellowfin sole	26,014	340,844	8%	268,296	1,788,459	15%
Pollock/AMCK/Other species	1,464	17,224	8%	899	27,473	3%
Rockfish	0	0	0%	49	10,988	0%
GTRB/ARTH/SABL	0	0	0%	5,951	0	0%
Total:	452,899	906,500	50%	620,550	2,747,250	23%

Table 2 (cont.)

TRAWL C. OPILIO TANNER CRAB in the COBLZ AREA

Fishery group	Crabs (#'s)	Cap (#'s)	%
Rock sole/Other flatfish	105,151	969,130	11%
Pacific cod	94,788	124,736	76%
Yellowfin sole	681,630	2,776,981	25%
Pollock/AMCK/Other species	1,559	72,428	2%
Rockfish	0	40,237	0%
GTRB/ARTH/SABL	1,449	40,238	4%
Total:	884,577	4,023,750	22%

TRAWL RED KING CRAB**ZONE 1**

Fishery group	Crabs (#'s)	Cap (#'s)	%
Rock sole/Other flatfish	62,073	59,782	104%
Pacific cod	12,724	11,664	109%
Yellowfin sole	15,146	16,664	91%
Pollock/AMCK/Other species	1	1,615	0%
Total:	89,944	89,725	100%

Table 3

NMFS/AKR
10/31/02
12:33:28

2002 BERING SEA / ALEUTIAN ISLANDS FISHERIES
TRAWL HALIBUT BYCATCH MORTALITY (METRIC TONS)

WED	PACIFIC COD	YELLOWFIN SOLE	ROCK SOLE/ FLATHEAD SOLE/ OTHER FLATFISH	PLCK/AMCK/ OTHER	ROCKFISH	ARROWTOOTH/ SABLEFISH/ TURBOT
01/19/02	2	0	0	0	0	0
01/26/02	41	0	48	3	0	0
02/02/02	110	0	35	6	0	0
02/09/02	27	0	37	8	0	0
02/16/02	29	0	95	7	0	0
02/23/02	46	1	174	4	0	0
03/02/02	62	1	199	2	0	0
03/09/02	38	56	0	2	0	0
03/16/02	19	43	0	4	0	0
03/23/02	32	44	0	2	0	0
03/30/02	44	25	0	1	0	1
04/06/02	43	13	54	0	0	0
04/13/02	46	18	58	0	0	5
04/20/02	44	20	46	0	0	4
04/27/02	39	78	0	0	0	1
05/04/02	39	135	0	0	0	7
05/11/02	48	41	0	0	0	7
05/18/02	45	1	0	0	0	4
05/25/02	28	2	0	0	0	2
06/01/02	1	15	0	0	0	0
06/08/02	1	18	0	0	0	0
06/15/02	1	30	0	0	0	0
06/22/02	68	0	0	4	0	0
06/29/02	67	0	0	11	0	0
07/06/02	8	0	17	3	44	2
07/13/02	8	0	11	3	3	1
07/20/02	2	0	17	3	15	2
07/27/02	2	6	38	5	0	2
08/03/02	4	112	0	9	0	0
08/10/02	7	69	0	13	0	3
08/17/02	10	58	0	12	0	0
08/24/02	4	73	0	13	0	4
08/31/02	23	33	0	5	0	0
09/07/02	9	33	0	29	0	3
09/14/02	10	25	0	5	0	0
09/21/02	10	19	0	13	1	0
09/28/02	2	15	0	14	0	1
10/05/02	4	38	0	4	0	2
10/12/02	5	57	0	2	3	0
10/19/02	5	82	0	2	0	0
10/26/02	21	3	0	0	0	0
	1,055	1,165	827	188	68	51
SEASONAL CAP:	1,434	886	779	232	69	0
% OF CAP:	74%	131%	106%	81%	98%	0%
REMAINING:	379	-279	-48	44	1	-51
ANNUAL CAP:	1,434	886	779	232	69	0
% OF CAP:	74%	131%	106%	81%	98%	0%

TOTAL HALIBUT MORTALITY : 3,354
TOTAL FINAL HALIBUT CAP : 3,400

Table 4

NMFS/AKR
10/31/022002 BERING SEA / ALEUTIAN ISLANDS FISHERIES
FIXED GEAR HALIBUT BYCATCH MORTALITY (METRIC TONS)

WED	PACIFIC COD HOOK & LINE		OTHER SPECIES HOOK & LINE, JIG		ALL GROUND FISH POT GEAR	
	WEEKLY	TOTAL	WEEKLY	TOTAL	WEEKLY	TOTAL
01/05/02	15	15	0	0	0	0
01/12/02	26	41	0	0	0	0
01/19/02	15	56	0	0	0	0
01/26/02	15	72	0	0	0	0
02/02/02	15	87	0	0	0	0
02/09/02	21	108	0	0	0	0
02/16/02	20	128	0	0	0	0
02/23/02	30	158	0	0	0	0
03/02/02	23	181	0	0	0	0
03/09/02	20	201	0	0	0	0
03/16/02	0	201	0	0	0	0
03/23/02	0	201	1	1	0	0
03/30/02	0	202	0	1	0	0
04/06/02	0	202	0	1	0	0
04/13/02	0	202	0	1	0	1
04/20/02	1	203	5	5	0	1
04/27/02	0	203	1	7	0	1
05/04/02	1	204	0	7	0	1
05/11/02	1	205	11	18	0	1
05/18/02	0	205	0	18	0	1
05/25/02	0	205	6	25	2	4
06/01/02	2	207	1	25	4	8
06/08/02	2	209	1	26	0	8
06/15/02	0	209	0	26	0	8
06/22/02	0	210	0	26	0	8
06/29/02	0	210	0	26	0	8
07/06/02	0	210	0	27	0	8
07/13/02	0	210	1	27	0	8
07/20/02	0	210	0	28	0	8
07/27/02	0	210	5	32	0	8
08/03/02	0	210	1	33	0	8
08/10/02	1	210	7	40	0	8
08/17/02	21	231	0	40	0	8
08/24/02	36	268	0	40	0	8
08/31/02	32	300	0	40	0	8
09/07/02	27	326	0	40	0	8
09/14/02	29	356	0	40	0	9
09/21/02	28	384	0	40	1	9
09/28/02	22	406	0	40	0	10
10/05/02	31	437	0	40	0	10
10/12/02	17	454	0	40	0	10
10/19/02	22	476	0	40	0	10
10/26/02	21	496	0	40	0	10
PCOD SEASONAL CAP:	775		OTHER SEASONAL CAP:	58	Pot gear is exempt from bycatch allowances	
% OF SEASONAL CAP:	64%		% OF SEASONAL CAP:	69%		
REMAINING PCOD:	279		REMAINING OTHER:	18		

2002 BSAI NON-TRAWL PACIFIC COD FISHERY HALIBUT BYCATCH ALLOWANCES

(Jan 01 - Jun 10)	320 MT
(Jun 10 - Aug 15)	0 MT
(Aug 15 - Dec 31)	455 MT
Annual Total	775 MT